

## Safety Data Sheet

### Section 1. Identification

**Product name** : EnDURE™ ZNP-913  
**Product code** : 424514  
**Uses advised against** : Consumer, private households, general public  
**Product type** : Liquid.  
**Validation date** : 1/23/2014.

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### Section 2. Hazards identification

**Classification of the substance or mixture** : ACUTE TOXICITY: ORAL - Category 5  
 ACUTE TOXICITY: INHALATION - Category 2  
 SKIN CORROSION/IRRITATION - Category 1A  
 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
 GERM CELL MUTAGENICITY - Category 1A  
 CARCINOGENICITY - Category 1A  
 AQUATIC TOXICITY (ACUTE) - Category 1

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## Section 2. Hazards identification

AQUATIC TOXICITY (CHRONIC) - Category 1

### GHS label elements

Symbol :



Signal word :

Danger

Hazard statements :

Fatal if inhaled.  
May be harmful if swallowed.  
Causes severe skin burns and eye damage.  
May cause genetic defects.  
May cause cancer.  
Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention :

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust or mist. Wash thoroughly after handling. Use personal protective equipment as required. Wear protective gloves. Wear protective clothing. Wear eye/face protection. Wear respiratory protection. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Keep out of reach of children. Do not breathe vapor. If medical advice is needed, have product container or label at hand.

Response :

Immediately call a POISON CENTER or doctor/physician. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned: Call a POISON CENTER or doctor/physician if you feel unwell. Get medical attention/advice. Collect spillage.

Storage :

Store locked up.

Disposal :

Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification :

Not available.

## Section 3. Composition/information on ingredients

Substance/mixture :

Mixture

Ingredient name	%	CAS number
Inorganic salt 1	20-30	-
Inorganic acid	10-20	-
Inorganic acid 2	10-20	-
Inorganic acid 1	1-10	-
Nickel Salt	0.1-1.0	-

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Inhalation** : Get medical attention immediately. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Move exposed person to fresh air. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Keep person warm and at rest. If unconscious, place in recovery position and get medical attention immediately. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Ingestion** : Get medical attention immediately. Chemical burns must be treated promptly by a physician. Move exposed person to fresh air. Wash out mouth with water. Keep person warm and at rest. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Remove dentures if any. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Never give anything by mouth to an unconscious person. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.
- Skin contact** : Get medical attention immediately. Chemical burns must be treated promptly by a physician. Provide a readily-accessible eyewash facility and quick-drench safety shower. In case of contact, immediately flush skin with plenty of water for at least 30 minutes while removing contaminated clothing and shoes. Continue to rinse for at least 15 minutes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Get medical attention immediately. Chemical burns must be treated promptly by a physician. Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open.

### Over-exposure signs/symptoms

See section 11 for more detailed information on health effects and symptoms.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Personnel should wear protective clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

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## Section 5. Fire-fighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
nitrogen oxides  
phosphorus oxides  
metal oxide/oxides
- Special precautions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Remark** : Not available.

## Section 6. Accidental release measures

- Personal precautions, protective equipment and emergency procedures** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

## Section 7. Handling and storage

- Precautions for safe handling** : Avoid exposure - obtain special instructions before use. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Put on appropriate personal protective equipment (see section 8). Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not breathe vapor or mist. Do not ingest. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Be sure area is equipped with all necessary emergency equipment including fire extinguishers, and spill response materials. Empty containers retain product residue and can be hazardous. Do not reuse product container. Avoid release to the environment. Do not breathe gas, fumes or vapor.

## Section 7. Handling and storage

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

Ingredient name	Exposure limits
Inorganic acid	<b>ACGIH TLV (United States, 3/2012).</b> STEL: 3 mg/m <sup>3</sup> 15 minute(s). TWA: 1 mg/m <sup>3</sup> 8 hour(s).
Inorganic acid 2	<b>ACGIH TLV (United States, 3/2012). Notes:</b> <b>Respirable fraction; see Appendix C, paragraph C. ACGIH 2003 Adoption</b> STEL: 10 mg/m <sup>3</sup> 15 minute(s). Form: Respirable fraction TWA: 2 mg/m <sup>3</sup> 8 hour(s). Form: Respirable fraction
Inorganic acid 1	<b>ACGIH TLV (United States, 3/2012).</b> STEL: 10 mg/m <sup>3</sup> 15 minute(s). STEL: 4 ppm 15 minute(s). TWA: 5.2 mg/m <sup>3</sup> 8 hour(s). TWA: 2 ppm 8 hour(s).
Nickel Salt	<b>ACGIH TLV (United States, 3/2012).</b> TWA: 0.1 mg/m <sup>3</sup> , (as Ni) 8 hour(s). Form: Inhalable fraction

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.

**Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

## Section 8. Exposure controls/personal protection

- Eye protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Avoid contact with eyes. Use safety eyewear designed to protect against splash of liquids.
- Skin protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Avoid contact with skin and clothing. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

## Section 9. Physical and chemical properties

- Physical state** : Liquid.
- Color** : Green. [Light]
- Odor** : Antiseptic. Odor
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : 100°C (212°F)
- Flash point** : Not available.
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 1.41
- Solubility** : Easily soluble in the following materials: cold water and hot water.
- Octanol/water partition coefficient** : Not available.
- Decomposition temperature** : Not available.
- Auto-ignition temperature** : Not available.
- Viscosity** : Not available.

## Section 10. Stability and reactivity

- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid exposure - obtain special instructions before use. Avoid release to the environment.
- Incompatibility with various substances** : Reactive with metals, alkalis.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Other Hazardous decomposition products** : carbon dioxide, carbon monoxide, Nitric oxide
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.

## Section 11. Toxicological information

**Routes of entry** : Dermal contact. Eye contact. Inhalation. Ingestion.

### Potential health effects

- Inhalation** : Fatal if inhaled. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. Adverse symptoms may include the following: respiratory tract irritation coughing May cause cancer if inhaled. Risk of cancer depends on duration and level of exposure.
- Ingestion** : May be harmful if swallowed. May cause burns to mouth, throat and stomach. May cause cancer if swallowed. Risk of cancer depends on duration and level of exposure.
- Skin** : Causes severe burns.
- Eyes** : Causes serious eye damage. Direct contact with the eyes can cause irreversible damage, including blindness.

### Chronic toxicity

- Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : Contains material which can cause heritable genetic effects.

### Specific target organ toxicity

Name	Category	Route of exposure	Target organs
Inorganic acid	Category 3	Not determined	Respiratory tract irritation

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	4347 mg/kg
Dermal	12430.6 mg/kg
Inhalation (vapors)	1.195 mg/l

Product/ingredient name	Result	Species	Dose	Exposure
Inorganic salt 1	LD50 Oral	Rat	3900 mg/kg	-
Inorganic acid	LD50 Oral	Rat	1.25 g/kg	-
Inorganic acid 1	LC50 Inhalation Vapor	Rat	130 mg/m <sup>3</sup>	4 hours
	LDLo Oral	Human	430 mg/kg	-

#### Additional information:

#### Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Inorganic acid 2	-	-	Equivocal	Rat - Female	Oral: 6846 mg/kg	-

## Section 12. Ecological information

**Ecotoxicity** : This material is very toxic to aquatic life with long lasting effects.

### Aquatic and terrestrial toxicity

Product/ingredient name	Test	Result		

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## Section 15. Regulatory information

- China inventory (IECSC) : All components are listed or exempted.  
Europe inventory : All components are listed or exempted.  
Australia inventory (AICS) : All components are listed or exempted.  
Japan inventory (ENCS) : All components are listed or exempted.  
Korea inventory (KECI) : All components are listed or exempted.  
Philippines inventory (PICCS) : All components are listed or exempted.  
United States TSCA : TSCA 5(a)2 proposed significant new use rules: No products were found.  
TSCA 5(a)2 final significant new use rules: No products were found.  
TSCA 12(b) one-time export: No products were found.  
TSCA 12(b) annual export notification: No products were found.
- United States inventory (TSCA 8b) : All components are listed or exempted.

## Section 16. Other information

### History

- Validation date : 1/23/2014.  
Supersedes Date : 3/27/2013.  
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### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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## Section 12. Ecological information

Inorganic acid 2	-	Acute EC50 0.042 mg/L Fresh water	Algae - Green algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	-	Acute LC50 98 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate - <24 hours	48 hours
	-	Acute LC50 1.1 to 2.5 ppm Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss	96 hours
Inorganic acid 1	-	Acute LC50 180000 ug/L Marine water	Crustaceans - Green or Europeon shore crab - Carcinus maenas - Adult	48 hours
Nickel Salt	-	Acute LC50 0.461 mg/L Fresh water	Crustaceans - Water flea - Moina macrocopa - 12 hours	48 hours
	-	Acute LC50 915 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Instar - <24 hours	48 hours
	-	Acute LC50 6200 ug/L Fresh water	Fish - Striped bass - Morone saxatilis - 20 cm	96 hours

**Conclusion/Summary** : Not available.

### Persistence/degradability

Product/ingredient name	Test	Result
Not available.		

**Conclusion/Summary** : Not available.

Product/ingredient name	Aquatic half-life	Photolysis
Not available.		

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Inorganic acid 1	-0.21	-	low

**Mobility** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG* Label	Additional information
DOT Classification	UN3264	Corrosive liquid, acidic, inorganic, n.o.s. (Inorganic acids, Nickel Salt)	8	II	ERG# 154
IMDG Class	UN3264	Corrosive liquid, acidic, inorganic, n.o.s. (Inorganic acids, Nickel Salt). Marine pollutant (Inorganic acid 2)	8	II 	-
IATA-DGR Class	UN3264	Corrosive liquid, acidic, inorganic, n.o.s. (Inorganic acids, Nickel Salt)	8	II 	-
UN Class	UN3264	Corrosive liquid, acidic, inorganic, n.o.s. (Inorganic acids, Nickel Salt)	8	II 	-

PG\* : Packing group

## Section 15. Regulatory information

### China

#### List of Toxic Chemicals Severely Restricted for Importing & Exporting by China

None of the components are listed.

### Korea

#### a. Regulation according to ISHA

ISHA Article 37 : None of the components are listed.

ISHA Article 38 : None of the components are listed.

#### b. Regulation according to TCCA

TCCA Toxic chemicals : Not applicable

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## Section 15. Regulatory information

TCCA Observational chemicals : None of the components are listed.

TCCA Article 32 (Banned) : None of the components are listed.

TCCA Article 32 (Restricted) : None of the components are listed.

c. Dangerous Materials Control Act : Not available.

### Europe

Safety, health and environmental regulations specific for the product : No known specific national and/or regional regulations applicable to this product (including its ingredients).

### Japan

### Poisonous and Deleterious Substances

Ingredient name	Status
None of the components are listed.	

### ISHL

ISHL Class : Class 3

Working Conditions Act; Health and Safety Act : Article 57. Corrosive.Clause 326.

ISHL Prevention of Tetraalkyl Lead Poisoning : Not listed

ISHL Harmful Substances Subject to Obtaining Permission for Manufacturing : Not listed

ISHL Harmful Substances, Prohibited for Manufacturing : Not listed

ISHL Chemicals requiring notification : Listed

ISHL Dangerous Substances : Oxidizing

List of Specially Controlled Industrial Waste : Not listed

Pollutant Release and Transfer Registers (PRTR) : Specified Class 1

Fire Service Law - Obstructive materials : Not listed

### Taiwan

List of chemicals for which manufacturing or handling is defined as "work specially hazardous to health" : This product contains substances "Specially hazardous to health": Inorganic acid 1.

List of chemicals reputed to be a "threat of imminent danger" : This product contains substances considered to be a "Threat of imminent danger": Inorganic acid, Inorganic acid 1.

### International lists

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